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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/397,850	09/17/1999	ARLIN R. DAVIS	219.37206X00	9295
23838	7590	05/05/2004	EXAMINER	
KENYON & KENYON 1500 K STREET, N.W., SUITE 700 WASHINGTON, DC 20005			BURGESS, BARBARA N	
			ART UNIT	PAPER NUMBER
			2157	19
DATE MAILED: 05/05/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

124

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/397,850	DAVIS, ARLIN R.	
	Examiner	Art Unit	
	Barbara N Burgess	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 February 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

This is in response to applicant's amendments and declaration filed on February 19, 2004. Claims 1-24 are presented for further examination.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 9-10, and 17-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Fairman.

As per claims 1, 9, and 17, Fairman discloses a method comprising:

- Sending a message from a local device to a remote device, via a network, said message including a transport header indicating a message type (column 2, lines 22-27, column 3, lines 37-47, 66-67, column 4, lines 1-2, 15-18, column 5, lines 31-35, column 6, lines 25-62);
- Determining, at the remote device, whether the transport header of said message identifies the message as a remote Direct Memory Access read operation (column 2,

Art Unit: 2157

lines 28-35, column 3, lines 39-46, column 5, lines 33-35, column 6, lines 5-11, 50-58, 63-67, column 7, 6-8, 21-30, 57-61, column 8, lines 14-23);

- Performing a remote Direct Memory Access write operation at the local device in accordance to data elements included in said message, if the transport header of said message identifies the message as said remote Direct Memory Access read operation (column 5, lines 41-67, column 6, lines 5-24, 36-48, 50-62, column 7, lines 5-20, 23-30, 40-60, column 8, lines 14-23).

As per claims 2, 10, and 18, Fairman further discloses:

- Data elements in said rDMA read message identify a set of source buffers in the remote device which reference the remote host-side memory and a set of destination buffers in the local device that reference the local memory (column 3, lines 36-47, column 4, lines 35-43, column 5, lines 60-67, column 6, lines 7-13, column 7, lines 25-30).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2157

4. Claims 3-4, 11-12, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fairman in view of Osborne.

As per claims 3, 11, and 19, the teachings of Fairman does not explicitly disclose the source and destination buffers being registered with a Virtual Interface network interface controller of the remote and local device.

However, the teachings of Osborne disclose receiving a virtual address from a controller in the network interface and determining the physical address based on the virtual address (column 1, lines 65-67, column 2, lines 29-31, column 8, lines 16-20, 48-50, 52-54). Therefore, Osborne implicitly discloses source and destination buffers being registered with the Virtual Interface network interface controller.

One of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate a Virtual Interface network interface controller in Fairman's method to ensure appropriate data transfer protection and reduce the interaction of the operating system, which in turn conserves host processing cycles enabling an increase in the number of cycles available to application programs while decreasing the overall time it takes to receive messages.

As per claims 4, 12, and 20, Osborne further discloses data elements of the rDMA read message specifying the source buffers and destination buffers as multiple data segments with offsets and designating a channel of the Virtual Interface (VI) as a data path for the rDMA write operation (column 7, lines 7-9, column 8, lines 37-39,

Art Unit: 2157

column 9, lines 44-55, column 11, lines 12-15, 36-37, column 13, lines 30-32, column 22, lines 48-49).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate the use of data segments with offsets and a channel of the Virtual Interface as the data path in Fairman's method to ensure appropriate data transfer protection and reduce the interaction of the operating system, which in turn conserves host processing cycles enabling an increase in the number of cycles available to application programs while decreasing the overall time it takes to receive messages.

5. Claims 5-6, 13-14, and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fairman in view of Osborne and in further view of Krishnan et al. (hereinafter "Krishnan", 4,922,416).

As per claims 5, 13, and 21, the combined teachings of Fairman and Osborne does not explicitly disclose a data element of the rDMA read message specifying a last data segment and completion of the rDMA read request.

However, in an analogous art, Krishnan discloses an end of message signal that indicates the completion of a process or data transfer (column 1, lines 31-33, 42-46, column 4, lines 48-50, 53-55, column 5, lines 36-38, column 7, lines 8-10, column 8, lines 10-12). Therefore, Krishnan implicitly discloses a data element of the rDMA read message specifying a last data segment and completion of the rDMA read request.

One of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate a data element specifying the completion of a rDMA read request in Fairman's, in view Osborne, method in order for a data process or transfer to be completed quickly and efficiently by enabling other read/write requests to be executed.

As per claim 6, 14, and 22, the teachings of Fairman does not explicitly disclose data is read directly from the remote memory of the remote device into the local memory of the local device over a Virtual Interface (VI) without making an intermediate copy. However, this feature is evidenced in the teachings of Osborne (column 1, lines 40-42, 67, column 2, lines 1, 22-25, 42-45, 55-61).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate reading data directly from the remote memory into the local memory in Fairman's method in order to conserve host processing cycles, increase the number of cycles available to application programs, and decrease the delay in receiving messages.

6. Claims 7-8, 15-16, and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fairman in view of Osborne and in further view of Krishnan et al. (hereinafter "Krishnan", 4,922,416) and in further view of Chow et al (hereinafter "Chow", 6,052,387).

Art Unit: 2157

As per claims 7, 15, and 23, the combined teaching of Fairman, Osborne, and Krishnan does not explicitly disclose write descriptors with a sequence inserted into the immediate data field on the last segment of each request.

However, in an analogous art, Chow discloses a last buffer bit, one field of the buffer descriptor, that indicates that the buffer descriptor is the last one of the linked list and thus the end of the data (column 4, lines 26-27, 38-40, 44-46, column 6, lines 39-41, column 8, lines 56-60, column 8, lines 12-16, column 9, lines 19-21, 25-26, 29-30). Therefore, Chow implicitly discloses write descriptors with a sequence inserted into the immediate data field on the last segment of each request.

One of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate the use of descriptors with the sequence inserted into the immediate data field on the last segment of each request in Fairman method in order to determine the end of a data to be read or written thereby decreasing the time it takes to read or write data and reducing the delay in data transfer.

As per claims 8, 16, and 24, the combined teachings of Fairman and Osborne does not explicitly disclose the completion of data transfer is based on the immediate data that arrives with the last data segments of each write operation.

However, in an analogous art, Chow discloses a last buffer bit, one field of the buffer descriptor, that indicates that the buffer descriptor is the last one of the linked list and thus the end of the data process (column 4, lines 26-27, 38-40, 44-46, column 6, lines 39-41, column 8, lines 56-60, column 8, lines 12-16, column 9, lines 19-21, 25-26,



29-30). Therefore, Chow implicitly discloses the completion of data transfer is based on the immediate data that arrives with the last data segments of each write operation.

One of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate completion of the data transfer is based on the immediate data that arrives with the last data segments of each write operation in Fairman's method in order to determine the end of the written or read data thereby decreasing the time it takes to read or write data and reducing the delay in data transfer.

### ***Response to Arguments***

#### **The Office notes the following arguments:**

(a) The Fairman patent cannot support a rejection of the pending claims because the claimed invention was conceived prior to July 29, 1999 (the priority filing of the application).

#### **In response to:**

(a) Applicant's argument has been fully considered but it is not persuasive. Applicant argues that Fairman fails to qualify as prior art based on Applicant's declaration filed February 19, 2004. However, the declaration disclosed by Applicant will not be considered because the declaration fails to disclose an actual date in which the invention was conceived. The evidence (Intel Invention Disclosure) submitted also fails to disclose a date although it specifically asks for a supervisor's signature and date.

Art Unit: 2157

Because of these deficiencies, the declaration will not be considered, and the rejections using the Fairman reference still stand.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara N Burgess whose telephone number is (703) 305-3366. The examiner can normally be reached on M-F (8:00am-4:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Ettinene can be reached on (703) 308-7562. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

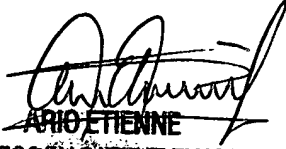
Art Unit: 2157

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Barbara N Burgess  
Examiner  
Art Unit 2157

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April 20, 2004

  
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